Amendments to the Claims:

Claims 1 to 3 and 10 are cancelled and claims 4 and 11 to 13 are amended as set forth hereinafter.

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1 to 3 (Cancelled).

4. (Currently Amended) ~~The method of claim 3, comprising the further steps of:~~ A method for operating an internal combustion engine having an air system, the method comprising the steps of:

computing at least one physical quantity of said air system from several input quantities with the aid of a physical model of said air system wherein said at least one physical quantity is not one of said input quantities;

comparing said at least one physical quantity to a measured value for said at least one physical quantity;

monitoring one of said input quantities or a model internal quantity of said physical model in dependence upon a deviation between the computed value and said measured value;

correcting the monitored input quantity or said monitored model internal quantity in dependence upon said deviation;

supplying said computed value and said measured value to a control unit as input quantities;

forming a corrective value in said control unit in dependence upon said deviation for the monitored input quantity or the monitored model internal quantity;

storing several corrective values in a characteristic field for different operating conditions of said engine;

determining a corrective value from said characteristic field in dependence upon the instantaneous operating point of said engine; and,

correcting the monitored input quantity or the monitored model internal quantity with said corrective value.

5. (Original) The method of claim 4, wherein the monitoring is conducted with the following further steps:

comparing the corrective value to a pregiven threshold value; and,

detecting a fault when said corrective value exceeds said pregiven threshold value in magnitude.

6. (Original) The method of claim 5, wherein a charge pressure of said engine is selected as said at least one physical quantity.

7. (Original) The method of claim 5, wherein a fresh air mass flow supplied to said engine is selected as a monitored input quantity.

8. (Original) The method of claim 5, wherein an effective cross section cleared by an actuator is selected as a monitored input

quantity.

9. (Original) The method of claim 8, wherein said actuator is an exhaust-gas recirculation valve.

10. (Cancelled).

11. (Currently Amended) ~~The method of claim 10~~, A method for operating an internal combustion engine having an air system, the method comprising the steps of:

computing at least one physical quantity of said air system from several input quantities with the aid of a physical model of said air system wherein said at least one physical quantity is not one of said input quantities;

comparing said at least one physical quantity to a measured value for said at least one physical quantity;

monitoring one of said input quantities or a model internal quantity of said physical model in dependence upon a deviation between the computed value and said measured value;

wherein the following are selected as input quantities of said physical model: a fresh air mass flow, an engine rpm, a fuel mass flow, a charge air temperature and at least a position of an actuating member of said engine; and,

wherein said actuating member is an exhaust-gas recirculation valve.

12. (Currently Amended) The method of ~~claim 1~~ claim 4, wherein an exhaust-gas temperature is selected as a monitored model

internal quantity.

13. (Currently Amended) An arrangement for operating an internal combustion engine having an air system, the arrangement comprising:

a physical model of said air system for computing at least one physical quantity of said air system from several input quantities wherein said at least one physical quantity is not one of said input quantities;

comparator means for comparing said at least one physical quantity to a measured value for said at least one physical quantity; ~~and,~~

monitoring means for monitoring one of said input quantities or a model internal quantity of said physical model in dependence upon a deviation between the computed value and said measured ~~value~~ value;

means for correcting the monitored input quantity or said monitored model internal quantity in dependence upon said deviation;

means for supplying said computed value and said measured value to a control unit as input quantities;

means for forming a corrective value in said control unit in dependence upon said deviation for the monitored input quantity or the monitored model internal quantity;

means for storing several corrective values in a characteristic field for different operating conditions of said engine;

means for determining a corrective value from said

characteristic field in dependence upon the instantaneous operating point of said engine; and,

means for correcting the monitored input quantity or the monitored model internal quantity with said corrective value.